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Scenarios as a scholarly methodology to produce “interesting research”



Rafael Ramirez^{a,*}, Malobi Mukherjee^b, Simona Vezzoli^c,
Arnoldo Matus Kramer^d

^a Strategy & Director of the Oxford Scenarios Programme, Saïd Business School & Green-Templeton College, University of Oxford, United Kingdom

^b Oxford Institute of Retail Management, Saïd Business School, University of Oxford, United Kingdom

^c International Migration Institute, Oxford Department of International Development, University of Oxford, United Kingdom

^d 100 Resilient Cities (Pioneered by the Rockefeller Foundation), Co-Founder and Partner Ithaca Environmental, Mexico

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ABSTRACT

Recent debates identified the insufficient production of “interesting research”, namely research that is innovative and develops theory while being both usable and rigorous. We propose that scenarios methodology as a scholarly form of inquiry is one way in which we can generate “interesting research”. We present and compare how this methodology was used to investigate three research studies: (i) the unfolding of retailing formats in India; (ii) the evolution of migration patterns in Europe and the Mediterranean; and (iii) climate change and regional and urban planning in the Tulum region of the Peninsula of Yucatán. We found that when scenarios are used as a scholarly methodology involving iterations and revisions, they help to challenge existing assumptions, identify novel lines of inquiry, and enable new research opportunities to emerge,—thus opening up a research mode that helps engaged scholars to make sense of and address complex and uncertain contexts and produce interesting findings.

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1. Introduction

In 2006, senior members of the Academy of Management voiced concerns about whether research on management is interesting, and whether the proportion of interesting research is falling (Bartunek, Rynes, & Ireland, 2006). They considered “interesting research” research that develops theory, is innovative, and less formulaic (p. 9). In their view, research that is “interesting” is more likely to produce learning; to be read, understood, and remembered; and to attract and keep bright students in academia (p. 10). Based on pioneering work by Davis (1981), they suggested “interesting research” disconfirms some, but not all, of the assumptions held by those who read it. Indeed, of the 67 Academy of Management Journal (AMJ) Board Members who responded to a web-based questionnaire designed by Dr Bartunek, who chaired the AMJ’s advisory committee in 2004, 57% suggested that a ‘most interesting’ article is counter-intuitive in the sense that it challenges established theory and/or creates an ‘aha’ moment (p. 13). For 46%¹ of the respondents ‘most interesting’ also creates new theory, for 31% it generates usable knowledge, and for 28% it stimulates new empirical or theoretical work. These findings

* Corresponding author.

¹ The percentages do not add up as several replies were possible.

may not be universal, as the authors noted that only 39% of Brazilian scholars responding to the same survey prioritised the generation of new empirical or theoretical work in contrast to the 28% proposed by US-based respondents.

The AMJ board members who were surveyed believed that it was both possible and desirable to raise the proportion of articles published in the AMJ regarded as important, competently executed, and *really interesting* (italics in the original). This is something [Alvesson and Sandberg \(2011, 2013\)](#) have investigated, and they blame the lack of interesting research not on an alleged lack of rigour but on “the almost total dominance of incremental gap-spotting research within management studies” (2013, p. 129), supported by mutually reinforcing institutional conditions, professional norms, and identity constructions. They propose that gap-spotting research makes it difficult “to ask more fundamental and sceptical questions that may encourage some significant rethinking of the subject matter in question” (p. 134). Instead they advocate pursuing “more genuine and scholarly values and qualities like being intellectually broad-minded, independent, imaginative, willing to take risks, enthusiastic about intellectual adventures, and frequently provocative” (p. 143). Instead of gap-spotting researchers, they think what is needed is researchers “with a broader outlook, curious, reflective, willing and able to question their own frameworks and to consider alternative positions, and eager to produce new insights” (idem.). They call for “methodologies that more directly stimulate new and challenging ideas and contributions” (p. 144) in order to set or upset paths, challenge consensus, span across theoretical frameworks, and bend frames (2013, derived from table in p. 148).

In this paper, we take up both the critique on the lack of “interesting research” and the challenge posed by [Alvesson and Sandberg \(2011\)](#) to adopt methodologies that stimulate challenging ideas; and we propose that scenarios provide a methodology scholars can use to produce “interesting research”. To the best of our knowledge, this proposal has never been made before, but many scholars have put forth intimately related suggestions, which we review below. The central contribution of this paper is to explain how scenarios as methodology may be used to develop “interesting research” both conceptually and when applied—in our case applied in three specific case studies.

A second contribution is to show how the scenario research methodology can live alongside, challenge, and yet complement more established research approaches, such as surveys and propositions based on statistically representative empirical data sets. A third and final contribution is to alert potential users of scenario research methodology to the challenges that using it entails.

The paper is organized as follows. First we succinctly review the development and nature of scenario work to date, clarify definitions, and lay out from a conceptual perspective how scenarios are an effective scholarly methodology to produce interesting research. We then succinctly present and analyse three research studies by three of the authors of this paper who used scenarios as a scholarly methodology. We discuss these and conclude by linking scenarios methodology with epistemological issues raised in both the scenarios and futures studies literatures.

2. Scenarios: history, definition, and purpose

Across different fields and practices, the term ‘scenarios’ does not mean one same thing, or serve the same purpose, or involves one form of production. In this paper, ‘scenarios’ are understood to be a small bespoke set of structured conceptual systems of equally plausible future contexts, often presented as narrative descriptions, manufactured for someone and for a purpose, typically to provide inputs for further work ([Schnaars, 1987](#); [van der Heijden, 2005](#); [Ramirez, Selsky, & van der Heijden, 2008](#)). Because scenarios are about the context or environment rather than the self, they are not about oneself or one’s actions but about what happens to one independent of agency. However, this also entails they are specifically for someone, as an environment entails the “environs” or context that surrounds an individual. This actor-specificity is one characteristic that differentiates scenarios from forecasts, which are for anyone ([van der Heijden, 2005](#); [Ramirez et al., 2008](#)). To date, the most common use for scenarios is in planning ([Zentner, 1982](#); [Godet & Roubelat, 1996](#); [Godet, 2000](#); [Lesourne & Stoffaës, 2001](#); [Chermack, Lynham & Ruona, 2001](#); [van der Heijden, 2005](#); [Ringland, 2006](#); [Rigby & Bilodeau, 2007](#); [Roxburgh, 2009](#); [Chermack, 2011](#)).

Because scenario planning developed as a practitioner-led domain in a great variety of settings, many different practices, methods, techniques and tools have been proposed and used. Social scientists have made scenario planning practices an object of study and have found that many of these practices contradict others in terms of both their ontological assumptions and their epistemological orientations, leading to what [Martelli \(2001\)](#) referred to as “methodological chaos”. Several efforts to distinguish, compare, and classify the variety of scenario planning practices and their theoretical and philosophical underpinnings have been undertaken ([Chermack, 2004](#); [Bradfield et al., 2005](#); [van Notten, 2006](#); [Wilkinson & Eidinow, 2008](#); [Burt and van der Heijden, 2008](#); [Walton, 2008](#)).

In this paper, we seek to advance the scholarly inquiry on scenario practices in a different direction. We propose that scenarios can be used not only for planning purposes but also as a scholarly research methodology to produce interesting research.

Various scholars have explored related constructs (scenario ‘thinking’, scenario ‘analysis’, scenario ‘development’, scenarios as a ‘tool’, scenario ‘studies’) in research. [Han \(2011\)](#) suggested that for researching international relations “(scenario thinking) is a complementary toolkit that has promise for generating new ideas and arguments, broadening the range of causal relationships that we study, and tracking the evolution of world politics through periods of discontinuous change, in ways that promise to better over time both understanding and action.” (p. 61). In as much as methodologies are the theories that underpin the epistemology of choosing what methods (tools, techniques) are to be deployed in research, his suggestion echoes what we propose. Other scholars have adopted scenarios in a research setting, such as [Sankaran, Dick,](#)

Shaw, and Cartwright (2014) who used 'scenario analysis' to research leadership; while Ravera, Hubacek, Reed, and Tarrasón (2011) interdisciplinary modelling in adaptive action-research used 'scenario development' alongside "conceptual modelling and other scientific information" for a "back-casting exercise" to "help stakeholders discuss scientific inputs, infer connections amongst variables, assess the usefulness and performance of multidimensional indicators, and link present and future through a policy gap analysis" (p. 439).

Research in environmental sciences has more closely approximated what we propose. Evans, Hicks, Fidelma, Tobin, and Perry (2013) thought of scenarios as a research 'tool' when they investigated how the Great Barrier Reef might be affected by climate change. They concluded that scenarios helped them to "elicit a diversity of responses from multiple stakeholders . . . that contributed new and interesting insights into how adaptation is perceived" (p. 854). Schweizer and Kriegl (2012) considered that, in environmental change research, "an important objective of scenario analysis is exploration; scenarios can potentially help users consider surprising developments or discontinuities" (p. 11); while Thompson et al. (2012) found that in long-term ecological research, scenarios can help to identify what they termed "new research needs" (p. 368).

Only one study, by Öborn et al. (2013), utilised scenarios as a scholarly methodology with the specific purpose of producing interesting research. They used scenarios as a methodological approach to formulate a research programme on the future of agriculture. Their results consisted of 37 research questions grouped into 5 challenges. The purpose of their study was "to identify research issues addressing challenges and opportunities related to agriculture and food security" (p. 835) and to "vitalize future agriculture research" (idem.). They concluded that "using scenarios for identifying future research issues resulted in a strong emphasis on the need of interdisciplinary research. The methodology also reduced the bias from the individual participating researchers' disciplines . . . scenarios provided us with a context for a common identification of problems and knowledge gaps before suggesting solutions . . . (and) . . . helped to broaden the discussion beyond special interests among researchers and stakeholders. The scenarios both helped (them) to think in a longer time perspective; and to identify research needs that are not on the public agenda, or perceived as warranted" (p. 836, parentheses added).

A research methodology theorizes the choice of tools, techniques, and other processes of inquiry which seek to produce or verify knowledge. Thus methodology manifests the specific epistemology of the chosen research strategy. Scholarly research methods typically include a systematic process of producing or gathering data that is rigorous in the sense that the data can be verified. Morgan (1983) critically examined the scientific choice of method and proposed that just, "as Gödel has shown in relation to mathematics, there is a fallacy in the idea that the propositions of a system of thought can be proved, disproved, or evaluated on the basis of axioms within that system . . . (so) it is not possible to judge the validity or contribution of different research perspectives in terms of the ground assumptions of any one set of those perspectives, since the process is self-justifying. Hence the attempts . . . to judge the utility of different research strategies in terms of universal criteria based on the importance of generalizability, predictability and control, explanation of variance, meaningful understanding, or whatever are inevitably flawed" (p. 15). Research methods help to advance scholarly inquiry when they help the researchers to generate, (in) validate, or alter theories in the form of insights on current views that are considered true, and when they encourage the questioning and problematisation of assumptions (Pettigrew, 2001)—which as we show in this paper, is something scenarios-based inquiry does well. Sandberg and Tsoukas (2011) suggested a move from a scholarship centred exclusively on scientific rationality to one that also encompasses practical rationality. Hence, a methodology that takes in and utilises multiple conceptualisations (practical as well as theoretical) would make research findings usable not only by researchers but also by practitioners such as government, urban planners and business executives to name a few.

We propose that adopting scenarios as a scholarly methodology can articulate what Sandberg and Tsoukas (2011) proposed, and can deliver what Alvesson and Sandberg sought: "interesting research". This is because scenarios involve processes of inquiry that can guide the research of complex issues involving long range dynamic processes in uncertain contexts by accommodating and comparing different perspectives; and can involve doing so in a number of iterations that makes it possible to revisit and revise assumptions and decisions and tentative findings, as required by the learning that each iteration supports. An example is Wilkinson and Elahi's (2003) use of scenarios in their *Risk-World* project to "enable...the communities of experts involved in academic risk research and those advising on risk management policy to be brought together and to reflect on what really matters concerning societal risk perception and management. . . . The . . . project was designed to provide an initial exploration of insights into the future of risk as a way of exploring societal trends" (p. 356).

In this paper, we argue that as methodology, scenarios broaden the scope of study from the specific research question to also include its context, which is often difficult to substantiate, particularly in uncertain settings. It also helps scholars and those they study to together critically consider existing assumptions and possible future developments in their field of study. We propose that, as research methodology, scenarios entail an accessible, transparent, testable and contestable inquiry process. These characteristics are specifically apparent in the revision and iteration of scenarios found in Section 3. To do so we describe and analyse three research studies which used the scenarios methodology in three distinct fields – retail management, international migration, and climate change adaptation-making the research both accessible and rigorous and helping to produce interesting findings.

3. The application of the scenarios methodology in three research studies

Scenarios were the prime research methodology in three research studies which, albeit being in different fields, relied on the development of a conceptual framework and the collection and analysis of empirical data to deliver rigorous, valuable,

and testable research results. These studies were undertaken separately but in the same university by three of this paper's authors; each of the researchers held early methodological conversations on their research studies with the same scenario researcher, the first author of this paper, which has helped to render the three research studies comparable.

This research study comparison was inspired by the case-comparison research done by Eisenhardt (1989) and follows Yin's indications on how to compare case studies (Yin, 1994). To assess the motivations for using the methodology and explore the actions taken in each study (Westgren & Zering, 1998), we have followed a common structure to present and compare the three different research studies: first we describe the context in which the research emerged, the dominant theory and methodology in the field of each research study and the added value of the scenarios methodology, then how the scenarios methodology was applied and finally the results it achieved. A table comparing the extant assumptions in the relevant field and the findings produced in each research study shows how scenario as a scholarly methodology can help produce interesting research.

3.1. Scenarios for retail format development in India

3.1.1. Retail research conceptual framework

This study to assess the future of retail modernisation in India began in August 2009. India was at the cusp of retail modernisation but fierce opposition in parliament and in public fora had created retail policy paralysis. With little understanding of the multidimensional nature of retailing and perceived uncertainties of suppliers', middlemen's and shopkeepers' future, policy makers harboured myopic views of modernisation and of traditional retailing. The hypothesis held by part of the political diaspora was that retail modernisation would inevitably kill traditional retail and cause considerable unemployment. Erstwhile studies on retail development were based on territorial expansion and penetration decisions; and on saturation indices, primarily in geography. Though saturation indices provide relevant information, studies suggest they are too simplistic (Hirschman, 1978; Ingene, 1984; Valentin, 1991) and fail to capture local market complexities and can therefore be misleading.

This study's intent was then to inform and to challenge this public debate, foregrounding the multiple dimensions at play in retail and its environment, and their combined impact on the future of the retail sector in India. The researchers also expected to identify aspects of retail development specific to emerging markets to contribute to the wider retail literature.

The scenarios methodology in retail research was first advocated to provide an alternative approach to study the competitive dynamics of retail formats that had reached the more advanced stages of the life cycle (Valentin, 1991). The idea was that to survive and even thrive in turbulent times (van der Heijden, Ramirez, Selsky, & Wilkinson, 2010), retailers would have to do more than just respond to changing competitive conditions—they would have to try to anticipate them. Porter (1980) recommended that in such contexts, firms with incipient competitive groups and industries could construct scenarios to help them envision the evolution of the competitive environment, and in turn, help them formulate and implement appropriate and timely courses of action.

As scenarios accept structural uncertainty with multiple interpretations and multiple futures, the researchers found them relevant for studying the many retailing contexts present in large, diverse, developing economies like India. The researchers decided that a scenarios methodology would enable them to identify multiple alternatives of possible retail futures in this uncertain, complex, unfolding set of situations where there is no 'magic bullet' (Rayport, 1999) or no one 'correct' business model. Countless possible 'right' answers, endless combinations of business models, and infinite permutations of key themes and approaches needed to be considered. By providing multiple perspectives on how Indian retailing could develop with a scenarios methodology, the researchers sought to broaden what they considered to be a myopic view of India retail development which, at the time of this research had become the topic of fierce debate in the public arena, providing novel perspectives that could change the debate.

3.1.2. The scenarios methodology

The research team opted for the scenario method van der Heijden (2005) called 'deductive' which creates a 2×2 quadrant of four scenarios. It was taken to offer a number of relevant advantages: it helps to explore factors in the broader contextual environment in which retail development occurs, including non-obvious and more indirect ones and to help surface and question assumptions different stakeholders were making. The methodology also provides a clear structure that can be understood by people not involved in the production of the scenarios²; it can help to debunk common but inaccurate assumptions, and to examine uncertain factors using an integrative thinking approach resulting in an uncertainty/impact matrix.

This research had three phases, running between February 2009 and April 2011 and included a number of methods, including three sets of iterative scenario workshops with key stakeholders of Indian retail development: practitioners, policy makers and academics (see the case study comparison in the table in Appendix for a more detailed description). First, interviews were conducted to identify pertinent issues, driving factors and critical uncertainties. The data thus produced was combined with secondary data by the researchers to produce a first scenarios set.

² Whereas in the alternative inductive method the structure contrasting the scenarios it yields is often less clear.

Two research workshops were then held in India, where the first set of scenarios was shared with a wider group of stakeholders. Here the scenarios were deliberated and debated upon and contrasting interpretations and institutional contexts were manifested as a dense network of interactions. This first deconstructed and then revised the initial set of scenarios. While the core elements identified remained largely unchanged they benefited from a refinement of the critically uncertain factors that had been originally identified. Following this, a second research workshop deepened scenarios enabling stakeholders to visualize the implications of each scenario for regulation, format choices, location, product choices, and pricing and logistical decisions for their respective organizations. The methodology allowed for plurality in the knowledge building process and helped stakeholders to progressively translate the initial creative thinking into pragmatic operational guidelines.

In a third stage, a global research workshop on retailing in emerging markets was held in an international retail researchers' conference attended by retail specialists from emerging markets in the Asia Pacific region. It was held in September 2011 in Malaysia. Another round of scenario deconstruction and revision during this workshop provided a further opportunity to validate the plausibility of the alternative future retail scenarios for India. In effect, this research workshop acted as a peer review process for each scenario, further contributing to the credibility of the findings.

Each iteration enabled scenarios to include multiple perspectives on retail issues as perceived by stakeholders, allowed the researchers to better capture the uncertainties of the unfolding Indian retail context, and provided a conceptual space for organizational guidelines to be considered by the stakeholders. According to Pettigrew (1997), such a process enables both the relevance and the quality of scholarship and research. Moreover, multiple workshops and several iterations (including construction and deconstruction) of the scenario drafts also rendered the scenario sets developed in each round to become easily 'accessible' and comprehensible to those participating in subsequent workshops, enabling them to revise and – as relevant – to reconstruct the scenarios. The number of iterations also made the choice of scenarios more 'transparent', 'testable' and 'contestable', as every iteration invited criticism and helped those involved to question the scenario versions developed in the preceding round.

3.1.3. Findings and challenges

The stakeholder engagement during the three stages of scenario building unearthed a more nuanced reasoning for the driving forces which shape retail development and which underpinned the final retail scenarios. Each iteration of the scenarios set surfaced the significance of two driving forces: regulations and consumer behaviour, neither of which had been well understood up to now. Debating the importance of retail liberalisation with the scenarios methodology surfaced two interesting research findings—the importance of the political ramifications regarding retail policies and retail development in emerging markets; and the complexities of a form of consumer behaviour caught between cultures of tradition and modernity. Debating the manifestation of new consumption patterns in the same way highlighted the need for developing a more qualified set of possibilities regarding how differently consumers might behave depending on what socio-demographic group they belong to; and how important the relevant hedonistic consumer behaviour and aspirations might be. This complex consumer behaviour was found to imply that traditional values would continue to render traditional retailing formats relevant in the foreseeable future; and simultaneously increasing modernity would also create the opportunity for modern retailing to thrive in the Indian retail sector—or in other words, traditional and modern retailing could co-exist.

Combining these two driving forces using the scenarios methodology helped the researchers to relate previously unrelated variables and to conceptualise future retail development in India in an innovative way. The findings challenged the established patterns of retail format development theory developed based in the Western context (Hirschman, 1978; Ingene, 1984; Valentin, 1991; Porter, 1980), where the scale efficiencies of increased retail format sizes has been conceptualised as the predominant path for retail development. Instead, this research suggested that in retail modernisation in emerging markets, it is regulators who matter—specifically their role in retailing politics as they seek to provide politicians with a balanced position between being recognised for supporting retail liberalisation and being blamed for the demise of traditional retailing.

The resultant scenarios and their implications transcended 'common-sense' solutions and provided non-obvious insights, particularly in identifying a possible hereto-unthought of hybrid model of retailing. In this model, traditional and modern retailing would co-exist. Although an unconventional finding, the rigorous way in which these factors and their interaction were combined, then verified through several rounds of scenario deconstruction and revision, and then again through a peer review of each scenario helped the research to challenge commonly held assumptions of Indian retailing. The findings thus challenged the discussions in the public forum by questioning the view that retail modernisation would necessarily destroy traditional retailing.

Following the research workshops, three different Indian retail companies commissioned the researchers to conduct similar scenario workshops for their operations in India—the reason given being the need for 'non-obvious' insights into practical problems faced by them in the Indian market. Two British associations with retailers as members and stakeholders also commissioned the researchers to run similar workshops in the UK for their clients.

Despite the very positive outcomes that were obtained, the scenarios methodology presented some challenges. One challenge entails designing research workshops so that they are mutually beneficial to stakeholders and researchers, including decisions on how to attract the right mix of experienced practitioners and policy makers to engage with a process alien to them. Events were run free of cost for stakeholders and they were also given the opportunity to network with one another, both of which helped to attract the right people. But this was expensive and this experience suggests that in future

research efforts would have to make the workshops break-even, which furthers the difficulty of deploying scenarios research.

3.2. Exploring international migration futures in Europe and the Mediterranean

3.2.1. Conceptual framework in international migration research

This study was launched in July 2009 to explore the possible futures of migration in Europe and the Mediterranean. Presumed 'migration crises' and fears of large scale immigration led to the politicization of international migration and the promotion of highly visible but contested policy responses, which too often produced unintended negative short term effects. Yet long term migration visions were hampered by a limited understanding of the multidimensional process involved in migration decisions, which focused on economic, demographic and political factors but largely neglected to consider shifts in ideology, technological advancement and educational opportunities among others.

Research on migration determinants identified the role of historical-structural factors, individual-rational choices, inequality and relative deprivation, cumulative forces of migrant networks, and trans-nationalism (Massey et al., 1993), and recent research linked migrants' aspirations and capabilities to opportunities and challenges existing in society (de Haas, 2010). Research on the future of international migration conventionally relied on forecasts and probabilistic projections, which suffer from conceptual limitations (Bijak, 2006), such as the removal of factors that are volatile, uncertain, and/or difficult to quantify, and are hampered by a lack of reliable data (Bijak, 2006; de Haas, Vargas-Silva, & Vezzoli, 2010; Dustmann, Casanova, Fertig, Preston, & Schmidt, 2003; Khan & Lutz, 2007). Thus, forecasts on future migration trends led to unsatisfactory results (Dustmann et al., 2003; Khan & Lutz, 2007). This study sought to challenge these conventional approaches and to present international migration as part of broader long-term historical processes, rather than as a problem to be resolved (International Migration Institute, 2006).

Scenarios were first used in 2008 by another group of researchers to explore the future of international migration to OECD countries (OECD, 2009). Regrettably, the resulting scenarios largely depicted a continuation of current economic and migratory trends, failing to visualize challenging and plausible alternative futures (OECD, 2009). The researchers in this study felt that the potential of the scenarios methodology was left untapped and it remained the best alternative to forecasting methods as it provided conceptual room to better capture interactions between states, markets, policies, migrants, migrant families and migrant organizations. With scenarios, the research study could listen to and consider the views of academics and practitioners, uncover and examine their assumptions and make note of any evidence they provided on the political, socio-economic and natural environments in which international migration occurs, and on connections and mechanisms that might alter international migration in the future.

3.2.2. The scenarios methodology

The research team also used the deductive scenario method – see Section 3.1.2 –, which provided a number of advantages: factors not commonly associated with international migration could be included because they may have a direct or indirect role in shaping international migration (e.g. labour market structures and modes of production); assumptions that may have remained unquestioned due to the politicized discourse on international migration could be questioned; highly unstable and uncertain factors (e.g. economic growth and opportunity structures, political developments) could be examined and evaluated for their potential impact and unexpected consequences on international migration patterns (e.g. technological advancements); stakeholders, among whom policy-makers, would be confronted with evidence of the complex and multi-directional processes of migration.

The research design included three phases, which ran from July 2009 until mid-2011 and involved a number of activities: the elaboration of a conceptual framework, an online survey, three workshops and the generation of new hypotheses for future research (see the table in Appendix for a more detailed description). In the first phase, the research team developed a conceptual framework of the multi-level factors shaping international migration in both sending and receiving countries, drawing from state-of-the-art migration theories. Theoretical gaps were identified, including limitations and biases embedded in current research on migration determinants. Then, experts and stakeholders were engaged through interviews and their participation in a first scenario research workshop, which led to the production of a first scenario set and the identification of a number of predetermined emerging factors present in all scenarios (Burt, 2008). This first scenarios set was shared through an online survey with the stakeholders as well as a broader network of migration experts working in academia, civil society, governments, the private sector and international organizations, who had not been previously involved in the study. Survey respondents generated insightful questions that were used by the researchers to elaborate and further refine the original scenario set.

In the second phase, the researchers and stakeholders were brought together for a second workshop to assess the elaborated scenarios set. This workshop generated rich discussions held in a safe and open environment whereby stakeholders critically challenged existing knowledge and attempted to understand the views of other stakeholders. As in the Indian retail research study described in Section 3.1, being able to do this corresponds with Shrivastava's and Pettigrew's (Shrivastava, 1987; Pettigrew, 1997) considerations of how to obtain usable and rigorous scholarship. Stakeholders initially identified four key factors as central for the understanding of future international migration: demography, technology, socio-cultural changes and their potential effects on migration policy (e.g. xenophobia and anti-immigration measures) and environmental changes. A third research workshop was organized to engage experts in these four areas, who presented on

current and possible future developments and sparked a discussion on how changes in each area and the possible future interactions among these factors could lead to new developments in the global context and shifts in international migration. The research team integrated the insights from these expert discussions into the final iteration of the study's scenarios.

In the third phase of the study, the researchers used the insights gained from the various scenarios to generate new research questions and to contribute to the advancement of the conceptual framework. Ultimately, the scenarios methodology opened room for alternative perspectives on migration which challenged and reframed the field's dominant discourse and its underlying assumptions, creating opportunities for "interesting research". Moreover, the participation of practitioners in the debate increased the relevance of research by increasing knowledge on migration dynamics, decision-making processes and the potential unexpected consequences of migration policies.

In each iteration of the scenario research process, stakeholders could use easy to understand tools and techniques to adapt and improve the scenarios. This shows that the scenario research process can be a transparent and accessible methodology, and it has a 'built-in' mechanism to make tentative findings produced in any one iteration testable and contestable. Each iteration also gives the opportunity to understand how scenarios are generated and to assess whether bias has affected given iteration of the scenario building process—and to correct for it, as relevant.

3.2.3. Findings and challenges

The scenarios methodology provided a structure for an iterative inquiry process that could embrace many different perspectives and which encouraged revisiting and reformulating arguments and outcomes, leading to stimulating discovery. For instance, stakeholders re-examined the assumed availability of an infinite number of low skilled workers from lower income countries, and the assumed continued attractiveness of Europe and North America in the future. As a consequence, questions emerged on the appropriateness of current immigration policies based on short-term visions.

The study generated new ideas on what might drive migration, bringing to the surface the complexity of international migration. Stakeholders and researchers identified that: certain factors were already "in motion" (e.g. demographic transition in North Africa) and although they had not surfaced as migration drivers, they would have future effects on existing migration patterns and possible relations existed among several of factors leading to a number of previously unimagined plausible outcomes. The chaos of constantly fluctuating conditions could be examined and used to visualize future plausible outcomes (Bernard, 2008). New and clarifying visions of possible migration futures emerged including: the importance of energy—of alternative energy sources and future centres of energy production; the lack of direct impact from environmental factors on international migration; how possible human development levels in North Africa and other developing countries can affect migration aspirations and capabilities; how technology can shift migration demand; and how possible low-skilled labour shortages may re-evaluate certain jobs, e.g. personal care workers.

Although imagination is central in producing scenarios, 'rigorous reasoning' (Barbieri-Masini & Vasquez, 2000) made the plausible scenarios produced in this research study internally coherent and conceptually valid representations of possible future changes. Conflicting views and possible future discontinuities could be accommodated in different scenarios, while a limited number of key factors could be reconsidered in several iterations (van der Heijden, 2008). Many stakeholders welcomed the opportunity to reflect and share thoughts and observations to make sense of the world and to surface emerging futures that they previously failed to perceive (Burt, 2008). Moreover, their participation contributed to an in-built peer review system.

For the researchers in this study, a number of new research questions were produced, for example: Is it really the case that the growth of a 'youth bulge' in many developing countries will generate strong migration flows to developed countries? Under what conditions may climate change lead to adaptation, and when to increasing international migration? How will technology affect migration in the future? Will robotics reduce the need for service workers—e.g. in the healthcare industry?

While it is difficult to assess how the scenarios produced in this research study will impact the stakeholders and other scenario consumers (OECD, 2009), the research team was commissioned by a non-profit organization to apply this methodology to study migration in the Horn of Africa, and was recommended by two leading migration scholars to explore possible futures for migration in the Pacific region (Bedford & Hugo, 2012). This suggested that scenarios as a research methodology can live alongside, and complement, more established research approaches in international migration.

However, using scenarios as a research methodology presented three practical challenges. First, it was challenging to identify knowledgeable, intuitive and forward-thinking stakeholders who were able to commit time to participate in the workshops. Second, while the researchers' interest was in developing generative scenarios to explore future possibilities, stakeholders would have found more value working on adaptive scenarios to guide decision-making (van der Heijden, 2005) and their future activities. Lastly, the methodology required an important time and resource investment as the team of researchers learned to be at once expert scenario researchers, facilitators and stakeholders.

3.3. Climate change adaptation and tourism in the Mexican Caribbean

3.3.1. Conceptual frameworks in climate change adaptation research

The Mexican Caribbean is the country's most important tourist destination, it has the largest tourism infrastructure and hosts (Instituto Nacional de Estadística y Geografía (INEGI), 2011) over eight million tourists annually. It is the main cruise ship destination in the Caribbean (Altés, 2008; SECTUR, 2011), producing 30% of the total revenues from foreign tourism in Mexico (SEDETUR, 2008).

Yet in recent years the Caribbean region has experienced unprecedented extreme climate events, such as the record hurricane season of 2005 (Magrin et al., 2007). The Intergovernmental Panel on Climate Change (IPCC) noted that regions already at high risk from observed climate extremes are more likely to be adversely affected in the near future by increases in the magnitude and frequency of extreme events such as flooding, hurricanes, storm surges and heat waves (Schneider et al., 2007).

The research study aimed to answer the core doctoral dissertation research question: “what options for, and barriers to, climate change adaptation are identified by the tourism industry and community in the Tulum Region of the Mexican Caribbean from the time of the research in 2010–2030?”.

The researcher (then a PhD student), in accordance with the thesis supervisor, chose an action-oriented inquiry using scenarios as the core research methodology to examine what different actors in the public, private, and social sectors identified as options and barriers for climate change adaptation.

Research on regional and local climate adaptation tends to use vulnerability and adaptation policy assessments (Füssel & Klein, 2006). These use regional analyses derived from climate change impact ‘scenarios’—which are different models running climate and biophysical data under a selected number of future concentration of global greenhouse gas emissions (Nakicenovic et al. 2000), as opposed to scenarios as understood in this research study. The scientific community has worked over 25 years on climate change and tourism (Scott & Becken, 2010), with the IPCC Fourth Assessment Report reviewing tourism and climate change research for different regions (Magrin et al., 2007; Amelung et al., 2007); and the UN World Tourism Organization (UNWTO), the UN Environmental Programme (UNEP) and the World Meteorological Organization (WMO) commissioning another report on tourism and climate change (United Nations World Tourism Organization and United Nations Environment Programme, 2008). Yet Scott and Becken (2010) argued that it is only as of 2010 that scholars have begun to develop relevant scientific knowledge to inform decision-makers in the tourism sector, and it is only as of 2010 that important information gaps in some regions, including the Caribbean, are coming to light.

In this field prior studies have used scenarios to analyse tourism development trends such as the UNWTO tourism 2020 and 2030 visions (United Nations World Tourism Organization, 2001, 2011), as did the UK-focused Forum for the Future report on tourism (Draper, Goodman, Hardyment, & Murray, 2009). Studies assessing impacts of climate change on future tourism demand have used global and regional climate scenarios (Amelung et al., 2007; Hamilton, 2005).

The evolution of climate change vulnerability assessments has moved from considering multiple climate impacts to considering policy options responding to multiple stresses (Füssel & Klein, 2006). Several studies have underlined the importance of using both non-climate and climate change scenarios (Tompkins, Few, & Brown, 2008; Willows & Connell, 2003). The research study we report here used local socioeconomic scenarios and regional climate change impact information to broaden the scope of adaptation options at the local scale for the region of Tulum in the Mexican Caribbean³.

This research study drew on political ecology and utilized a ‘critical participant’ approach with the help of scenarios as the core research methodology to encourage the search for new possible future alternatives to inform policy (Rocheleau, 2008). Scenarios as a research methodology was used from the beginning of the study to both assess and to inform policy, and as a means to translate climate change information into a local context. The scenarios research methodology was also used to involve other stakeholders in the discussion about plausible futures and to broaden strategic and planning adaptation options.

Political economy assumptions on human–environment relations have been often challenged when proposing alternative futures (Rocheleau, 2008). Yet, although unequally distributed wealth development, in the form of hotel development for example, disproportionately contributes to climate risks, mass tourism has remained the predominant development vision for the Mexican Caribbean and is equated with generating economic wealth (Manuel-Navarrete, Pelling, & Redclift, 2011). So the scenarios this research study produced challenged these neoliberal policies and the theories supporting mass tourism and economic growth. They surfaced long-term sustainability issues that would arise and helped local stakeholders, including regional policy-makers, to challenge mass tourism development trends in the region and to relate these to available alternative adaptation policy options. The scenarios this research produced helped to consider an alternative more environmentally friendly form of future coastal tourism development associated with involving a longer-term development vision. The scenarios also related hitherto unconnected factors to each other.

3.3.2. Scenarios methodology components

Building the scenarios iteratively helped to create knowledge with multiple stakeholders through strategic conversations and to work through climate change implications (Tompkins et al., 2008; Hanson et al., 2006). The researcher carried out 19 semi-structured interviews with stakeholders who considered that the tourism economy, and its governance, planning, and sustainability would be the main drivers of the future socioeconomic context for the region. All contacted actors agreed to be interviewed, and/or to informal conversations and/or to participate in the scenarios research workshop. The analysis of these interviews identified key drivers with which the researcher produced two storylines outlining two plausible socioeconomic draft scenarios for the region of Tulum in the year 2030. These drafts were improved upon and validated in iterative conversations with key informants and through two focus group sessions. The focus group sessions reinforced the

³ This thesis was submitted as a doctoral dissertation at the University of Oxford, including peer review by two supervisors and two examiners.

drafts with what Churchman called a 'Locke-an' system of inquiry (Churchman, 1971), where truth is established through consensus among a 'community of inquirers'.

The improved scenarios disrupted established conceptual assumptions centred on the mass-tourism model adopted in the region (Torres & Momsen, 2005a,b). Broadening the discussion in a one-day scenarios research workshop, convened by the researcher and held in March 2010 with 28 stakeholders, helped to identify and deliberate on options, barriers, priorities, and institutions that could implement actions for regional adaptation planning. A draft of the findings and results of the scenarios research workshop was written in a report by the researcher and sent to the stakeholders for feedback and validation.

The scenario research methodology helped to translate climate change information into a local context of rapidly changing socioeconomic conditions; to stimulate dialogue on key uncertain factors; to problematize commonly held, unquestioned assumptions; and to generate new knowledge.

The scenario research methodology techniques included interviews, focus groups, and informal conversations. The iteratively produced two scenario story-lines clarified that four factors (the tourism economy, governance, planning, and sustainability) could be the most important shapers of the region's future socioeconomic context. The procedures constituting the scenario research methodology were accessible and transparent for everyone involved; and the iterations with the participants produced an inquiry process that invited people to contest perspectives explicitly, supporting the scholarly rigour of the research.

3.3.3. Results and challenges

Using the two draft scenarios, stakeholders identified 23 adaptation measures, prioritized these in each of three time periods (2010–2015, 2015–2020, and 2020–2030) and identified 33 barriers that could prevent adaptation.

Few, Brown, & Tompkins, 2007 note that participatory deliberative processes on climate adaptation challenges power relations, sometimes with tensions between principles of public participation and anticipatory adaptation. This research study was undertaken in conditions of very fast urbanization, and encountered difficulties in prioritizing longer-term anticipatory adaptation measures (Few, 2007; Dessai & Hulme, 2004). Yet the participation of authorities at various government levels attest to the scenario as research methodology's potential in improving practitioner knowledge, influencing organisational behaviour, and improving administrative preparedness, rendering the research findings more

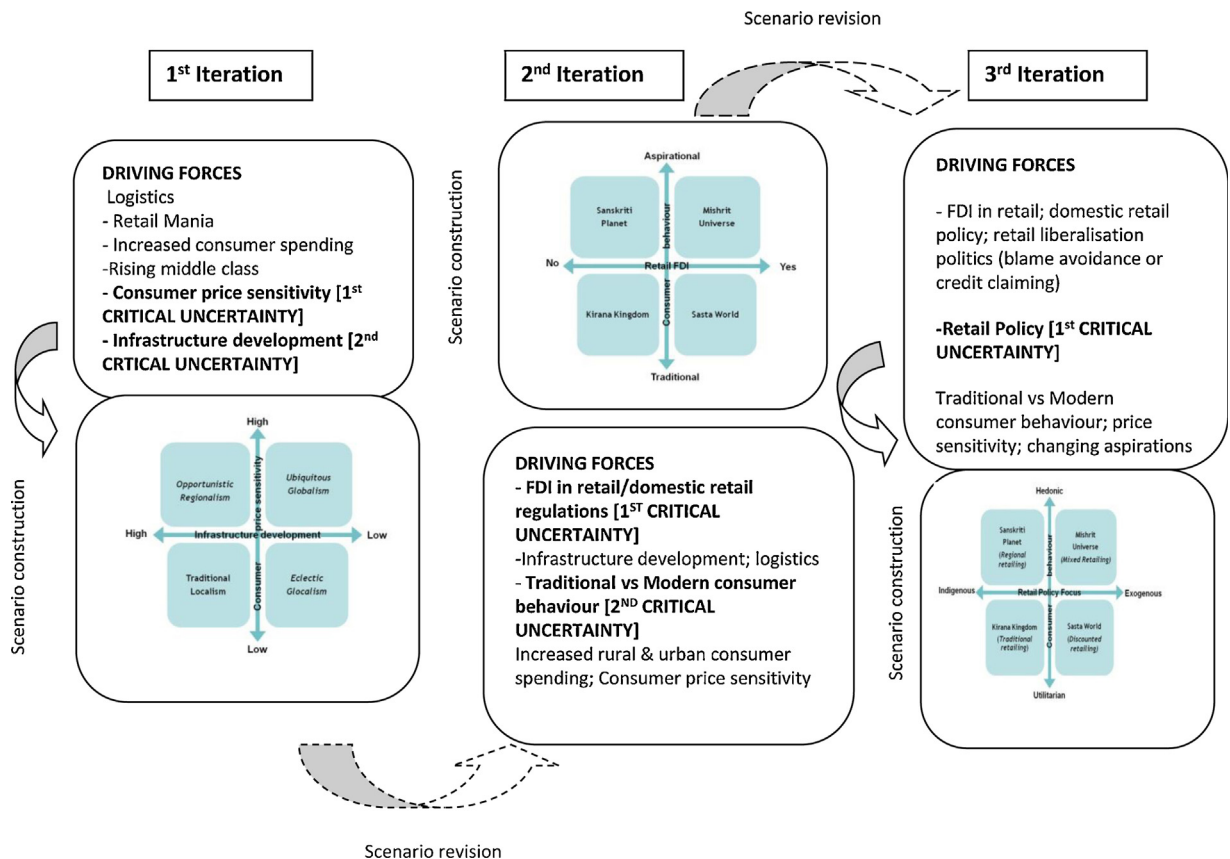


Fig. 1. Indian research case.

usable. Thus, the scenarios methodology was recognized as valid by Mexico's National Institute of Ecology and Climate Change (INECC, Spanish acronym), as the research findings it produced were immediately applicable to address issues such as the municipal level roles in a National regulatory framework on climate change and in the country's National Climate Change Strategy (Mexican Government, 2012; CICC, 2012; CICC-SEMARNAT-INECC, 2013).

The research study however involved important limitations. One was having only a single one-day scenario research workshop, constraining breadth of participation, depth of dialogue, and limiting the number and richness of trade-off analysis. Therefore, the results of the research study cannot be confused with what a more exhaustive assessment might offer and the findings have to be considered exploratory. Another limitation concerned the data available at the time of the research. Using scenarios as a scholarly methodology, as in the other two research studies presented above, was challenging and it requires significant financial and logistical resources.

4. Analysis and inter-research study comparison

The table comparison in Appendix summarizes the three research studies in a common format. Despite the different fields of each research study there are striking similarities among them in terms of why the scenario research methodology was chosen, how the research was conducted, the type of substantive findings it yielded, how it relates to and complements extant research strategies in the field, and what limitations and problems arise when engaging in scenarios as a scholarly research methodology.

Research with a scenarios methodology has been tentatively adopted in international migration research, while as reported in the research study on Mexican tourism and suggested by Moss et al. (2010), scenarios have been used to research climate change adaptation. Yet few studies have translated climate change impacts into local contexts to support vulnerability and adaptation policy assessments and choices (Tompkins et al., 2008). On the other hand, to our knowledge, the Indian retailing study is the first one using scenarios methodology in that field to identify how retail formats might develop in an emerging market environment.

The three research studies each started within a research field where conversations beyond the status quo were difficult because of assumptions hiding high levels of uncertainty. In each of the studies, as Figs. 1–3 illustrate, three roughly

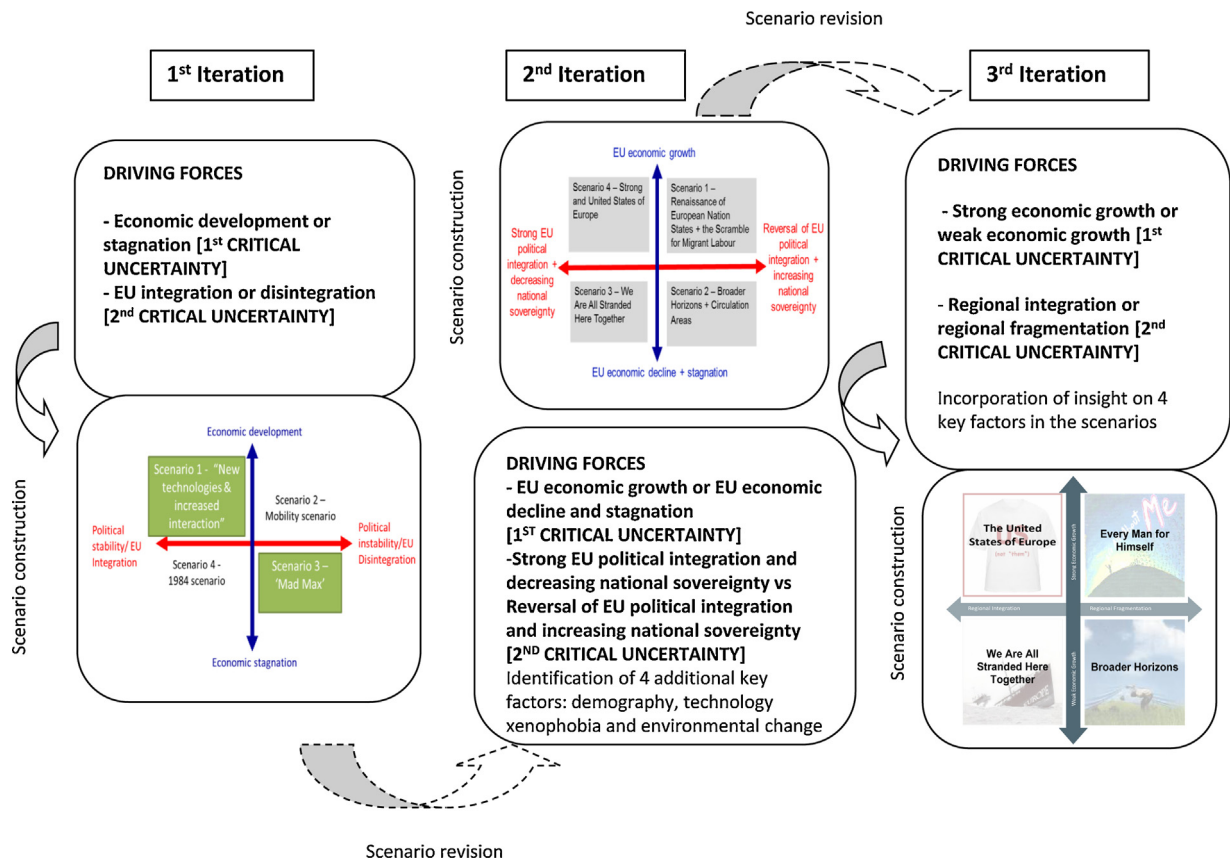


Fig. 2. Migration research case.

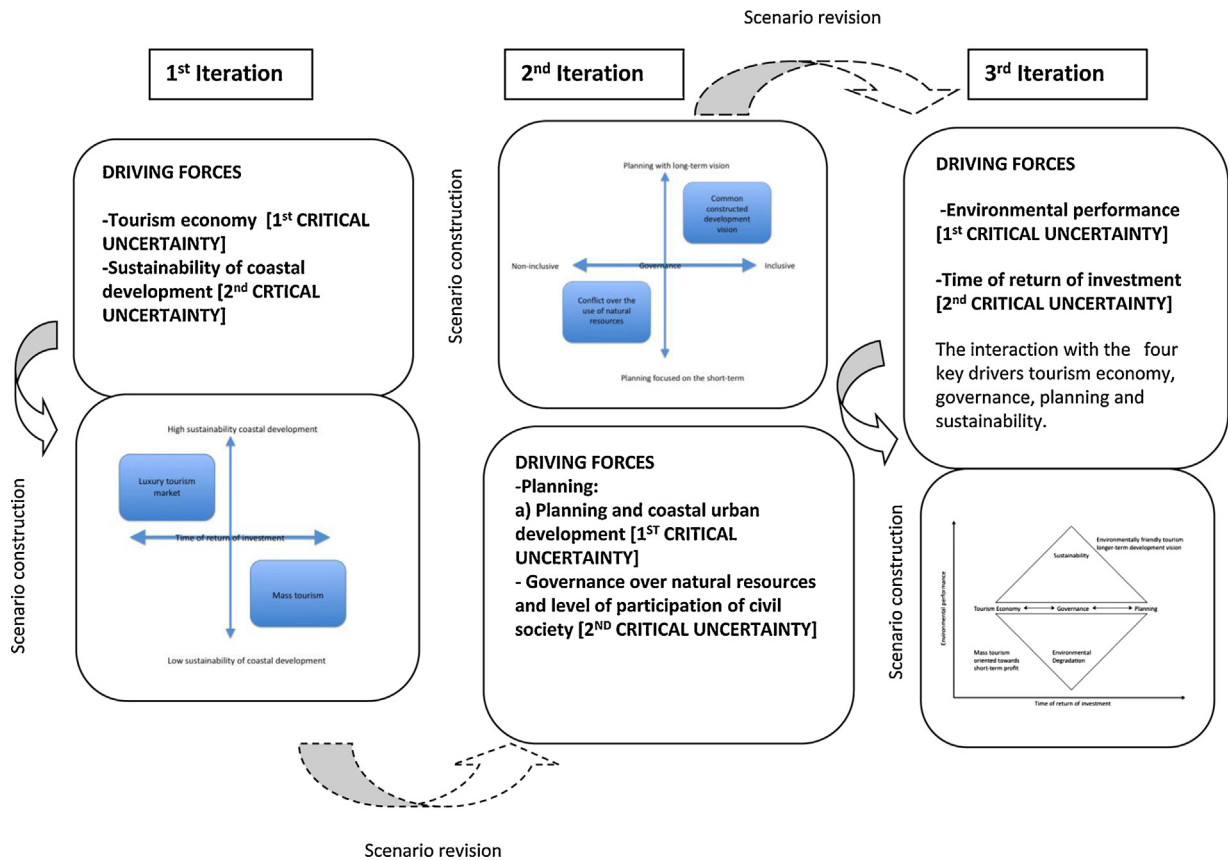


Fig. 3. Mexican Caribbean research case.

comparable phases were planned and implemented over similar lengths of time by small research teams involving comparable numbers of stakeholders.

Similarly, the extant dominant research in each field is positivist and relies on models which utilize data sets to identify trends and draw appropriately qualified projections as to how trends are expected to play out in the future. All three research studies suggest that the resulting 'reference projections' (Ackoff, 1999) are often over-simplistic; tend to fail to capture relevant but nuanced or complex factors and to account for uncertainties; are too general for the truth relevant to the concrete local situations studied; ignore stakeholder insights; and/or fail to accurately inform or guide local relevant policy or strategic action. And all three studies challenged part of the dominant view in their respective field. Table 1 summarises the interesting research findings that the scenarios methodology produced in each of the three studies.

In every study, the first intended users of the research conducted were the researchers themselves, who sought to problematize extant perceptions, contribute new knowledge, and produce scholarly publications vetted by peers. Additionally, each study sought to produce usable research with the input from a wide variety of stakeholders. These aspects obey to the tenets of 'engaged research' (Trist, Emery, & Murray, 1997; van de Ven, 2007), which seeks to be both rigorous and relevant (Massey et al., 1993; Burt, 2008), while also putting in question existing frameworks and conventional positions that produced 'novel ideas' (migration), 'broader insights' (Tulum) and 'connected seemingly unrelated factors' in novel ways (India). The Indian retail research study found that traditional and modern retail formats can co-exist rather than having the one displace the other, as had been assumed to be the case based on Western research. Specifically, it proposed that cultural nuances which consumer behaviour manifests can maintain relevance of traditional retailers when foreign retailers enter a market; and that efficiency in retailing is not always scale-based as the 'politics of retailing' can often be far more significant than the 'economics of retailing'.

In the migration study, the factors identified as central in understanding the future patterns of mobility went beyond conventional demographic and economic changes to include technology, socio-cultural changes and their influence on migration policy (e.g. xenophobia), as well as energy and alternative energy sources. By generating greater knowledge of the complexity of migration and the numerous assumptions built into politicized immigration debates, awareness was raised on the limits and dangers of simplistic migration discourses and migration policy solutions.

Table 1
Key points on ‘interesting research’ from the three case studies.

Case study	Assumptions challenged by the scenario research methodology	New perspectives (interesting findings) brought forth by the scenario research methodology
Indian retail	<p>1. Retail modernisation will lead to the demise of traditional retailing in India</p> <p>2. Opening up foreign direct investment, and modernising retail related regulations to multi-brand retailing in India, will result in modernisation of the Indian retail sector</p>	<p>1. The nuances and traditions of Indian culture contribute to the complex consumer behaviour, with a resulting continuing need for traditional retailing while also welcoming retail modernisation. Traditional and modern retailing will therefore co-exist in India</p> <p>Retail regulations (foreign or internal) are tactical issues that need to be resolved. The more complex issue remains the politics around retail regulation—and its implications on the mass vote bank (those working in the traditional retail sector). It is this issue that drives (or deters) decisions to modernise Indian retailing</p>
Mediterranean migration	<p>1. European countries will continue to attract migrants and need to put in place policies to ‘control’ immigration</p> <p>2. There is an infinite number of low-skilled migrants</p>	<p>1. Europe’s economic growth is uncertain and its attractiveness in the future will greatly depend on the opportunities available to migrants in Europe as well as on opportunities that may become available in other destinations. Thus, European countries need to consider potential competition in attracting low- and high-skilled migrants in the future</p> <p>2. Demographic transitions in North Africa and other major emigration areas suggest that there may not be large surpluses of labour in some developing countries in the future. Moreover, as educational aspirations increase all over the world, more potential migrants will have higher levels of education, raising questions about their willingness to do low-skilled jobs</p>
Tulum Tourism—based Development	<p>1. Neoliberal policies and theories supporting mass tourism as the predominant development vision for the Mexican Caribbean</p> <p>2. The lack of alternatives to neoliberal policy, manifested as short-term investments and interests in coastal development (and, implicitly, with views that tend to ignore climate change)</p>	<p>1. An alternative vision, with more environmentally friendly forms of future coastal tourism development (involving a longer-term regional planning) could enhance climate change adaptation and resilience</p> <p>2. Considerations of coastal climate change impacts (such as sea-level rise and more intense climate extreme events) suggest the increasing importance of longer-term coastal land-use planning, so as to avoid regional catastrophic risks</p>

In the Mexican tourism study limitations and costs of the extant hotel-intensive mass tourism development were clarified; and an alternative, eco-friendly tourism was posited as a plausible alternative for a viable and more resilient future for the region.

A more fundamental way in which scenarios as a research methodology complements the evidence-based, model-centred, and subsequent trend-setting *modus operandi* in retail format evolution, migration, and urban and regional policy making, relates to the contrasting ontologies they have of the future. Scenarios as a methodology helps to uncover assumptions, render them discussable, and determine if the images used to frame knowledge can plausibly be replaced with alternative images to help people know and act differently. As a methodology, scenarios are one of the research strategies that [Morgan \(1983\)](#) classified as producing knowledge through action (p. 399), where research is understood as exploratory rather than evaluative (p. 406).

A scenarios research methodology as [Wright and Goodwin \(2009\)](#) put it entails a “social-reasoning process which utilises dialogue and conversation to share participants’ perceptions of the environment and to facilitate . . . interactions . . . in a process of sense-making through theory building and storytelling” (p. 817). Already in 2007, [Chermack \(2007\)](#) considered “that scenario construction can be viewed as an appropriate mode of theorizing” and “it would be inappropriate to substitute scenario planning for empirical research” (p. 7). This view of the role of scenarios in developing new theory was supported by [Dufva and Ahlqvist \(2015\)](#), who echoed the view that empirically “statements about futures are neither true nor false” (p. 2). Thus scenarios cannot possibly be ‘objective’, as [Lloyd and Schweizer \(2014\)](#) would like them to be. Instead, as MacKay and Kiernan noted they provide a good way to generate new ideas ([MacKay & McKiernan, 2010](#)) and move ‘what-if’ ideas to the forefront in research, as [Ravetz \(1997\)](#) suggested would be the case in turbulent times: “with ‘what-if?’ as the leading question, our whole conception of the scientific enterprise could evolve in a fruitful way” (p. 536) “..indeed, it is when we are accustomed to asking ‘what-if?’ (that we) expect... the unexpected (and) fully appreciate how no single perspective can completely capture any real situation. This is what genuine complexity . . . is all about.” (p. 537). Thus, the Indian retail scenarios explored ‘what’ retail formats would emerge ‘if’ the politics around retail development triumphed over the

economics of retail liberalisation in a market where the cultural nuances of changing consumer disposition also entail complex shopping behaviours; and in the migration study what-if findings challenged perceptions regarding the stability of identified factors, helping to think through what would happen if any one changed. Scenario as methodology enabled ‘what if’ questioning to complement more traditional ‘what’ questions regarding factors driving migration and ‘how’ questions such as whether technological evolution increases or decreases migration. In the Mexican Caribbean study different adaptation alternatives – such as stopping mass tourism around Tulum – were examined with this approach. As [Slaughter \(2002\)](#) put it, such research “work is deeper, more risky and more challenging” (p. 506) than conventional research. Scenarios as methodology comprise what [Morgan \(1983\)](#) called “an approach to research that is substantially rational in the sense that its practitioners develop a capacity to observe and question what they are doing and to take responsibility for making intelligent choices about the means they adopt and the ends these serve”; and to “actively examine the choices that are open to realize the many potential types of knowledge waiting to be engaged, with active anticipation of the consequences of such engagement” (p. 406). This echoes what [Sardar \(2010\)](#) suggested is at the core of future studies, whose “discourse ..is not just multi- and trans-disciplinary, it is unashamedly un-disciplinary: that is, it consciously rejects the status and state of a discipline while being a fully-fledged systematic mode of critical inquiry” (p. 183).

It is important for colleagues considering the scenarios methodology to note that while once it is in place it is accessible, developing skills for it and investing in convening the right participants is considered financially onerous and poses difficulties to engage relevant stakeholders. The researchers in each of the studies also found it requires time and effort for them to master the thinking, techniques and tools involved in ways that can make the methodology accessible for all of those involved. Perhaps new technologies will allow some of these issues to be easier to deal with in the near future.

5. Conclusions

This paper has started from the observation that it is important to produce “interesting research”, as well as research that is both usable and rigorous. We have proposed that a scenarios methodology of scholarly inquiry allows these objectives to be met, and illustrated this proposition with a description and analyses of three research studies that used the scenarios methodology. We have highlighted issues with deploying this methodology and found that it does enable the production of usable, rigorous, and interesting research findings. We have also established that the scenarios methodology complements established, typically positivist research approaches.

So our paper proposes that scenarios have moved from an object of research by scholars into a research methodology scholars now use to produce “interesting research”, manifesting epistemological issues that the broader futures field has grappled with. We propose that the research studies we have described, compared, and analysed are not one-off exceptions, but versions of a research methodology which turbulent times could well make more common. Scenarios methodology entails a Hegelian or even Socratic scholarly approach where multiple interpretations are considered in terms of their plausibility, echoing what [Churchman \(1971\)](#) hoped the ‘Singerean’ mode of inquiry would comprise.

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Appendix.

	Indian retail development	International migration in Europe and the Mediterranean	Climate change adaptation and tourism in the Mexican Caribbean
Length of project and research team size	26 months, team of two researchers	24 months, extended for the application of scenarios to additional regions; team of three researchers	15 months; one lead researcher
Components of scenario work	The research consisted of three phases: 1) Nine key respondent interviews were conducted to identify the driving forces shaping possible future Indian retailing, and an initial set of retail format scenarios for India was developed; 2) A scenario workshop was held at the 5th Asia Pacific Retail Conference to review and validate the initial Indian	The research consisted of three phases: 1) Stakeholders’ interviews and first scenario workshop with 25 experts and stakeholders; 2) Elaboration and presentation of a first set of scenarios through an online survey, and a second stakeholders’ workshop attended by some of the same key stakeholders;	The research consisted of three phases: 1) Mapping stakeholders; 2) Development of local socioeconomic scenarios; 3) Deliberation workshop and validation of results. The research involved ten months of fieldwork; and a further five months were dedicated to research design, writing the results and

(Continued)

	Indian retail development	International migration in Europe and the Mediterranean	Climate change adaptation and tourism in the Mexican Caribbean
	retail scenarios with 20 international retail practitioners and academics; 3) Research workshops with 60 participants from Indian retail and policy sectors were conducted to further refine and deepen the scenarios	3) A third workshop with a small number of experts and then elaboration of the final scenario set	validating these with feedback from participants
Stakeholders involved in co-producing the research	The stakeholders involved in this research were Indian retail practitioners, Indian policy makers, and retailing academics from India and across the world	Stakeholders were selected among prominent and respected migration scholars, influential policy-makers working on migration issues, business leaders (e.g. from firms such as Manpower and Shell), international organization representatives (e.g. WHO), senior trade unionists (e.g. TUC), as well as key individuals from civil society organizations and the media (e.g. BBC Africa)	The research engaged a broad set of stakeholders from the national, regional and local levels. To identify relevant stakeholders the following criteria were used: 1) organizations or individuals that could be affected by decisions on adaptation planning in the tourism sector; 2) actors who were intermediaries in decision-making processes; and 3) actors who could alter vulnerability conditions or the ability to adapt to climate change, but whose interests were outside the decision-making process of adaptation planning. The stakeholders who were involved included individuals from the public sector at the federal, state and municipal levels, environmental NGO's, consultants, members of the tourism businesses sector, and leaders of the local Mayan community
Dominant research approach in the relevant field of study	Statistical analyses; case studies Retail research has been moving towards a quantitative and positivist mode. There is no innovative methodology to study the multifaceted features of retail development in India	Statistical analyses, models, and trends Conventionally-used probabilistic projection methods have practical and conceptual limitations. To improve the effectiveness of these models, researchers call on greater reliance on migration theory and expert opinion	Vulnerability and adaptation assessments that integrate global and regional scenarios of climate change impacts Regional and sectorial adaptation research use vulnerability and adaptation policy assessments. Multilateral organizations such as the IPCC, UNWTO, UNEP and UNWMO have reviewed relevant knowledge on tourism and climate change for different regions, including the Caribbean
Prior scenario work in the relevant field	Scenarios have been used primarily to study retail futures for mature markets. The intent has been to trigger innovative strategic thinking in mature, competitive markets Our research intended to conceptualize retail future scenarios in the context of emerging retail markets	One project by the OECD used the scenario deductive method. It was strongly centred on the economy and presented the next 20 years as a likely continuation of current migration trends	Scenarios have been used primarily to study trends in future tourism demand; and to look at the future of tourism development in relation to climate change impacts and climate policy. Studies assessing impacts of climate change on future tourism demand have used global or regional climate scenarios
Scenarios research intended users scenario research	First and foremost, research team Secondly, stakeholders such as retailers and planning authorities; other researchers	First and foremost, research team Secondly, stakeholders such as migration authorities; other researchers	First and foremost, lead researcher (DPhil thesis) Secondly, stakeholders such as planning authorities
Iterations in the scenario research	Repeat scenario workshops enabled to compare different data sources. Participating stakeholders were from different sectors, all related directly and indirectly to retailing; yet the same set of factors repeatedly emerged as critical and uncertain for Indian retail development. This improved the validity of the data generated from the scenario workshops	The scenario methodology offered an alternative and complementary approach that helped retain the complexity of migration processes. With it, we generated ideas through deduction, repeatedly iterating new thoughts with stakeholders through interviews, three workshops, and one online survey. Each of these activities produced insights that were further researched, elaborated, and developed into successive versions of the scenarios	We developed local socioeconomic scenarios and used regional climate change impact information. We engaged a broad set of stakeholders from the national, regional and local levels. Multiple methods and triangulation were used to engage the stakeholders with each other and the research and to validate results. Similar factors repeatedly emerged as critical and uncertain for the future of the tourism sector of the region of Tulum

(Continued)

	Indian retail development	International migration in Europe and the Mediterranean	Climate change adaptation and tourism in the Mexican Caribbean
How scenarios were “research” (and not ‘stakeholder engagement’ or ‘outreach’ or ‘integration’)	Unlike other research methods, stakeholders are instrumental in the creation of scenarios and thus a central actor in creating knowledge rigorously. Scenarios are strongly aligned with the critical realist epistemology that holds that knowledge creation is a social process and cannot be produced in isolation from stakeholders. Scenario work naturally allows involving stakeholders in a rigorous exchange where assumptions can be surfaced and tested	Scenarios helped to challenge pre-existing notions of causal mechanisms and develop insights in the structure-agency debate. Scenarios naturally involved mixed methods that enabled triangulation. The research was based on stakeholders’ insights and rigorously examined assumptions to determine when the insights might – or might not – be possible. With scenarios we could research new ideas and explore them using empirical evidence, followed by further examination of outputs by stakeholders and larger audiences	The use of future socioeconomic scenarios was an essential research method for the creation of knowledge relevant to discuss local futures and their implications for adapting the region to climate change. This is because the region is subject to a very rapid changing socioeconomic context affecting conditions of vulnerability to climate change. Socioeconomic scenarios are a useful research method to translate climate change information such as exposure and sensitivity to regional climate change impacts into a local context. Different scenarios confront stakeholders with different options, opportunities, barriers and priorities to adapt the tourism sector and the region. The scenarios together create broader understanding of uncertainties and climate risks for the region
How scenario research contributed to the field of study in which the research was undertaken	The significance of uncertainties built into the scenario methodology was relevant in capturing the multifaceted features of the Indian retail market. The inherent mechanism of scenario research enabled us to link seemingly unrelated factors in a meaningful way to better capture the unfolding dynamism of Indian retailing. Scenario research challenged the assumptions inherent in extant retail theory that retail modernization inevitably kills off traditional retailers and that modernisation must involve economies of scale and efficient use of technology. Alternative assumptions around the coexistence of modern and traditional retailing and the inherent efficiencies of regional knowledge and networks were proposed	Scenario research provided a structured approach to thinking in the long-term and for generating new and practical thoughts concerning global rapidly-changing factors and their possible effects on international migration. Through reiterated exploration, generation and testing of ideas, scenario research helps to surface ‘pre-determined elements’ that are present across all scenarios. Concurrently, other factors emerge as both important and uncertain, focusing further exploration. The scenarios produced challenged assumptions in migration debates, specifically those about the unlimited supply of low skilled workers from lower income countries and the continued attractiveness of Europe and North America. Alternative assumptions about the significance of demographic shifts, energy, alternative sources of energy and labour market needs were proposed	Scenarios stimulated discussion of social and economic uncertainties of great importance for local climate change adaptation planning. Through the scenarios we identified that it was the dynamics of the tourism economy, of regional governance, of how planning and sustainability efforts would be conducted to be the key drivers determining the future of both the tourism industry and of the region of Tulum. These drivers were integrated into socioeconomic scenarios to stimulate discussions on how the stakeholders could best pursue adaptation initiatives. The scenarios challenged the theoretical assumptions in tourism literature that support mass tourism and economic growth by surfacing the long term sustainability issues arising from climate change. They also evaluated alternative assumptions about the development of coastal tourism
Reflections on using scenario in our research—difficulties, advantages, lessons	The methodology is costly in terms of time, and the human and financial resources that must be deployed. Attracting the right calibre participants in terms of those having appropriate knowledge, experience and insight into the key issues of Indian retailing was a big challenge. Accounting for the contradictory impacts that scenarios can have on different stakeholders, so they can really value the variety offered in these for their own work, was another challenge. However, this challenge did not undermine the research quality – on the contrary, the contradictory strategic implications were made more explicit through scenarios, opening up opportunities for stakeholders to make	The methodology offers a process of deconstructing concepts and assumptions before reconstructing new perspectives with the newfound elements, creating deepened knowledge. Through this process, new research questions and hypothesis can be identified; hence, this methodology can be described as complementary to conventional research methods. Well-respected migration scholars have expressed interest in using this innovative research approach to explore the future of migration in other regions of the world. The methodology also presents challenges: finding qualified stakeholders, obtaining their time commitments, a steep learning curve	The methodology is resource intensive in terms of human, financial and logistical resources. The long-term and uncertain nature of climate change can result in a tension between principles of public participation and enabling the conditions for effective anticipatory adaptation. Despite the attention to the long-term built-in to the scenarios, we found participants identified more easily high priority measures in the shorter-term than in the longer-term. The breadth of participation (one day workshop) limited the depth of dialogue for assessing adaptation options

(Continued)

Indian retail development	International migration in Europe and the Mediterranean	Climate change adaptation and tourism in the Mexican Caribbean
more informed decisions about the future	for the research team, and the need of a generous budget to cover for workshop expenses and travel and accommodation costs for the stakeholders	

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